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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/352,976	07/14/1999	MICHAEL D. GILBERT	00169-027001	2851
26161	7590	07/22/2004	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			CHANG, VICTOR S	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/352,976

**Applicant(s)**

GILBERT, MICHAEL D.

**Examiner**

Victor S Chang

**Art Unit**

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-6,8,9,14-26,28-30,32 and 66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,8,9,14-26,28-30,32 and 66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The Examiner has carefully considered Applicant's amendments and remarks filed on 6/9/2004. Newly added claim 66 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn. In particular, upon reconsideration, the prior rejections under 35 USC 112, first and second paragraphs (see sections 6 and 7 of Office action mailed 12/8/2003) are now withdrawn.

#### ***Claim Rejections - 35 USC § 103***

4. Claims 1, 4-6, 8, 9, 14-26, 28-30, 32 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moulton et al. (US 5441830), substantially for the reasons set forth in section 8 of Office action mailed 12/8/2003, together with the following additional observations.

The examiner rewrites the previous Office action mailed 2/28/2003 as follows:

Moulton's invention is directed to methods for enhancing the adhesion of composite electrodes onto conductive plastic foils (Abstract). Moulton teaches that, typically, the "composite electrode" contains a polymer, which acts to bind the composite materials together, and an electrolytic solvent. For example, a composite cathode can comprise a compatible cathodic material, a conductive material, an electrolytic solvent, an alkali salt, and a solid matrix forming polymer (column 8, lines

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10-21). Suitable cathode prepolymers include epoxy molecules, such as propylene oxide, ethylene oxide, epichlorohydrin, etc. (column 12, lines 26-35).

For claims 1, 8 and 9, Moulton's conductive foils, electrolyte solvent, and matrix forming polymer read on Applicant's electrically conductive surface, electrolyte functionality, and matrix functionality, respectively. Although Moulton lacks an express teaching that the adhesive bond has a shear strength greater than 200 psi, it is the Examiner's position that since Moulton teaches methods for enhancing the adhesion of composite electrodes onto conductive foils, a suitable shear adhesion strength is believed to be either anticipated by Moulton, or an obvious optimization to one skilled in the art of electrode/foil adhesion, motivated by the desire to provide a durable cycle life. It should be noted that where the claimed and prior art products are shown to be identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See MPEP § 2112.01. Finally, the Examiner would like to point out that the phrase "capable of" in claim 1 is not a positive limitation but only requires the ability to so.

For claim 4, Moulton teaches that curing or crosslinking is generally accomplished by conventional techniques to form a solid electrode (column 13, lines 29-38). Although Moulton does not expressly state the crosslinking density and mechanical strength in different regions, it is believed that these properties are either anticipated, or obvious optimizations to one of ordinary skill in the art of electrode

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composite, since Moulton teaches essentially the same subject matter, as set forth above.

For claims 5, 6 and 14, Moulton teaches that the cathode paste can optionally contain film forming agents such as polyethylene oxide, polypropylene oxide, copolymers having a numbered average molecular weight of at least about 100,000 (read on low molecular weight alkoxides of claim 14) (column 12, lines 36-44). Although Moulton lacks an express teaching that the epoxy includes coordination sites, it is the Examiner's position that, in the absence of new and/or expected results, the coordination sites are believed to be either anticipated or obviously provided, once the product is made, because Moulton teaches essentially the same composition as the instantly claimed invention, as set forth above.

For claims 15 and 16, Moulton teaches that suitable cathode prepolymers are well known in the art and preferably are alkali or alkaline earth metal ion conducting, such as urethane acrylates, vinyl sulfonate polyalkylene oxides, etc. (column 12, lines 26-35).

For claims 17-20, the Examiner notes that the well-known in the art statement in the prior Office action (see Office action mailed 2/28/2003, page 5) is taken to be admitted prior art because Applicant either failed to traverse the Examiner's assertion of official notice or that the traverse was inadequate.

For claims 21-22, in Example 7, Moulton teaches that the cathode powder is prepared by combining 90.44 wt%  $V_6O_{13}$  [prepared by heating ammonium metavanadate ( $NH_4^+VO_3^-$ ) at 450°C for 16 hours under  $N_2$  flow] and 9.56 wt% of carbon

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powder (column 18, lines 57-61). Further, it is believed that anions such as perchlorate, hexafluorophosphate, etc., are commonly used to form the salts with alkaline or ammonium cations.

For claims 23 and 24, although is silent about the ionic conductivity of the electrode conductivity, the examiner notes that since Moulton teaches essentially the same invention, a suitable ionic conductivity is believed to be either anticipated, or an obvious optimization to one skilled in the art of electrodes, motivated by the desire to obtain a required amount of electrical current.

For claim 25, in Example 7, Moulton teaches that inhibitor is included in the preparation of cathode paste (column 19, line 32-33).

For claim 26, 28-30, 32 and 66, Moulton teaches composite electrodes having improved adhesion onto conductive plastic foils, as set forth above. Because the instantly claimed elements are essentially the same as the preceding claims, they are also rejected.

### ***Response to Amendment***

5. While upon reconsideration the Examiner has withdrawn the rejections under 35 USC 112, first and second paragraphs, as set forth above, the Examiner notes that Applicant has not responded to the Advisory mailed 4/22/2004, in which the Examiner maintains that Moulton expressly teaches that suitable "cathode prepolymers are well known in the art ... include ... propylene oxide, ethylene oxide, epichlorohydrin", etc. (column 12, lines 26-35). Further, in the same Advisory, the Examiner also maintains

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that Moulton's teachings read on the scope of the instantly claimed invention. The Examiner again urges that Applicant may wish to further clarify (limit) the scope of the claimed subject matter, as the claims fail to exclude the applied prior art thereof, and a Declaration of comparative data to distinguish the difference in adhesive strengths between the instant invention from Moulton's electrode composition may also help to clarify the point of novelty and/or nonobviousness, as suggested in an interview on 4/22/2003.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic  
Business Center (EBC) at 866-217-9197 (toll-free).

  
Victor S Chang  
Examiner  
Art Unit 1771

7/15/2004

  
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